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Abstract

An absorption spectroscopy apparatus having a fluid inlet and a fluid outlet. The apparatus includes a sample cell including an axis, a side wall having at least one curved reflective surface arrayed about the axis and facing inwardly with respect to the cell such that a beam of energy directed against a predetermined location on the reflective surface is reflected back and forth off the reflective surface and remains in substantially the same plane while inside the cell, and at least one port in the sidewall. The apparatus also includes at least one source/detector reflector having a curved profile in a plane extending perpendicular to the axis of the cell. The reflector is positioned with respect to the port of the cell to reflect energy through the port of the cell and against the predetermined location on the reflective surface of the side wall of the cell.